

New Energy Communities Initiative – Available GEO Programs

This initiative supports efforts to comprehensively impact a community's energy use and generation beginning in the downtown core and radiating outward into the community. Successful proposals will look to their downtown as the starting point, identify opportunities articulated in this program as well as other opportunities not suggested in the document and offer a comprehensive approach to reduce the energy needs and environmental impact of the downtown core while looking for opportunities for renewable energy production as well as other sustainability measures that can be implemented. Successful applicants will look at their community's other potential energy opportunities including: municipal buildings located outside of the downtown including waste-water treatment and recreation centers, residential buildings, government operations, model codes, renewable energy opportunities and the efficient coordination of these efforts.

Regional approaches that leverage programs and projects that are best done on a larger scale for cost and energy efficiency will be given preference. Matching funding is required, though some provisions exist within this program to assist in the locating of that match. One matching mechanism is to leverage Governor's Energy Office programs. Those are defined when appropriate. Another mechanism is to utilize Energy Services Performance Contracting (ESPC), C.R.S. 24-30-2001, to make a significant investment in efficiency for government infrastructure.

Approaches along with suggested budgets are as follows. All suggestions are just that, suggestions, and will need to be tailored to the community or group of communities applying with respect for the local circumstances (such as housing starts, housing stock, renewable resources, current programs). A sample budget is attached.

Downtown Specific Projects

Greening Public Facilities

The first place to begin community-wide sustainability efforts is with energy efficiency and renewable energy in public buildings, especially those on Main Street. Energy Services Performance Contracting (ESPC) can be an attractive option for investing in new energy-efficiency equipment and financing that equipment through the energy, water, and maintenance savings of the measures themselves. In other words the energy efficiency measures, though capital intensive up-front, pay for themselves and their financing costs with their energy and maintenance savings. An ESPC can be financed with no up-front capital; every dollar that is invested up-front can finance seven dollars (on average) of equipment upgrades over the term of a 10-12 year lease purchase. Therefore, ESPC projects with some up-front capital investment can be very effective at reaching deeper into energy efficiency and renewable energy project deployment than those with no up-front capital; the payback period can also be shortened.

The Governor's Energy Office (GEO) has streamlined this process by providing a list of pre-approved Energy Service Companies (ESCOs) that will provide the highest level of service and dependability.

County-wide or regional projects that aggregate public buildings in multiple communities are preferred to participate in an energy performance contract. Recognizing that building energy and water efficiency investments can have an order of magnitude greater savings on utility bills than renewable energy projects, it is recommended that participants allocate a minimum of three to one ratio of energy efficiency to renewable energy measure investments in their public facilities. GEO will help coordinate this effort by offering free expert engineering and management assistance through the entire process.

Recommended Budget:

Energy Efficiency (EE) Equipment Incentives:

\$250,000 to \$750,000 for energy efficiency equipment buy-downs depending upon size of the project, regional merit, project rate of return requirements and individual project efficiency measure opportunities.

Renewable Energy (RE) Equipment Incentives:

Recommend \$25,000 to \$250,000 for renewable energy equipment buy-downs depending upon size of the project, regional merit, project rate of return requirements and individual project renewable energy measure opportunities.

As a match to RE buy-downs, the GEO offers a *Renewables in Performance Contracting Grant* to reduce the cost of incorporating renewable energy into a performance contract to the extent that the system fits within an acceptable payback period for the entire project. Additionally, this incentive is designed to promote renewable technology after, or in conjunction with, energy efficiency upgrades. Organizations in the process of executing a performance contract, or those who have completed one within the last 5 years, may be eligible to receive up to \$25,000 in matching grant funds from the Governor's Energy Office (GEO) to add renewable energy technology to your facility. These funds may be used as matching funds for the requirement of this program.

Renewable Energy Demonstration Project

A highly visible renewable energy project that demonstrates the value and potential of renewable energy that utilizes a local, appropriate, and renewable energy source is a suggested measure for applicants. This project must be accompanied by a demonstration of maximized energy efficiency measures prior to approval of the renewable energy system.

Recommended Budget:

\$250,000

Greening Communities

LED (light emitting diodes) Street Lights

Light emitting diodes are solid state lighting devices with a long life and no hazardous disposal issues (mercury or lead) associated with many other lighting technologies. They use 40-70% less energy than more typically installed lighting technologies and are appropriate for use in many municipal applications including outdoor public lighting, parking garages and parking lots. LED lighting is an ideal technology to deploy in downtown public spaces as an energy conservation and waste reduction measure, as well as a visible commitment to the community of the energy efficiency measure being implemented locally.

Regional approaches to this measure will be given preference.

Recommended Budget:

\$250,000, to be matched with community funds for lighting retrofits, maintenance and operations.

Small Commercial Audit and Retrofit Program

Small commercial property represents perhaps the most immediate opportunity for downtown revitalization. However, it is a sector which is frequently overlooked due to the fact that it is spread over multiple property owners.

As successful small commercial energy audit and retrofit program is one that can aggregate the savings opportunities and buying power of dozens of customers. This can be done by evaluating the needs of all participating downtown small commercial property owners through a technical energy audit and then implementing a bulk equipment purchase. In addition, some Energy Service Companies have pioneered strategies to aggregate the savings potential of many customers under one project umbrella. Successful applications should consider innovative ways of aggregating customers. A recommended approach is a community recognition program that encourages and supports downtown businesses that are saving energy and water and adopting other sustainability minded approaches to encouraging a healthy downtown.

Program budget will scale directly with volume of small commercial downtown square footage. Lighting retrofit measures will dominate this space (typically T12 to super T8 or T5HO conversions), however HVAC and envelope (windows, insulation) upgrades will also be common.

Recommended Budget

Technical Energy Audit:

Any retrofit program begins with a comprehensive energy audit to identify and rank energy efficiency measures in order of increasing payback. A technical energy audit is one in which the

level of economic detail is sufficient for a small commercial property owner to make capital investment decisions.

The cost of a technical energy audit ranges from \$0.08 to \$0.15 square foot (sf) of commercial indoor space.

For example, a municipality with 1,000,000 square feet of downtown small commercial space would need to allocate \$80,000 to \$150,000 to offer free technical energy audits (assuming 100% participation). Most likely small commercial audits will need to be heavily subsidized if not free to the customer in order to get high rates of participation. An inventory of total square footage of downtown commercial space is crucial to budgeting appropriately for this program.

Efficiency rebates:

\$0.05 to \$0.10/kWh saved (standard utility efficiency incentive levels)

For example, small commercial efficiency typically results in 1-3 kWh/sf saved. Therefore, using the above 1,000,000 sf example one should anticipate needing \$50,000 to \$100,000 in rebate funding in order to incentivize small commercial property owners to invest in energy retrofits. Private property owners typically are not interested in investing in measures beyond a 3 year simple payback horizon and, in some cases, nothing beyond a 12 month payback. Therefore, incentives need to follow the technical energy audit to ensure that measures in the 1-3 year payback range get implemented.

\$200,000 per 1,000,000 square feet of downtown commercial space for audits and rebates is appropriate.

Outward Looking Programs

Residential Solar Electric and Solar Hot Water

Photovoltaic (PV) systems offer an option for most households to further their electricity use. Grid-tied PV systems allow the owner to send excess energy back into the grid and also benefit the owner by mitigating the susceptibility to fluctuations in the price of electricity. In addition, distributed solar electric systems decrease the demand for electricity generated from centralized fossil fuel plants, which leads to reductions in greenhouse gas emissions.

Solar heated domestic hot water is perhaps one of the most cost effective ways to incorporate renewable energy into a home. In the average Colorado home, up to 15% of the annual energy consumed is used for domestic water heating. By using solar energy to heat domestic water, home owners can significantly reduce their water heating costs while also mitigating the consumption of fossil fuels.

For both of these programs GEO has existing programs that create turn-key solutions for implementation by the community or regional partner. Both programs feature rebates to offset the cost of systems and support local economic development by incenting local business and reducing energy costs for residents.

Recommended Budget:

Minimum match to participate in the GEO's solar program is \$25,000 per PV or Solar Hot Water program with a maximum recommended request of \$250,000 (\$125,000 per technology). Recommended timeframe, 3 years.

The maximum allocation would require regional solar program manager to be hired in addition to a initiating both a PV and Solar Hot Water incentive program.

Recommended Budget:

\$75,000. Recommended timeframe, 3 years.

Insulate Colorado Program

The Insulate Colorado program offers regional partners or local communities the opportunity to offer their residents a rebate to insulate their homes. This is one of the most cost effective investments in residential energy efficiency available. It permanently lowers energy use helping to keep residents' dollars in the community. This is a strong economic development strategy that supports healthy communities including downtown areas. This turn-key program can be administered locally or on a regional basis and is offered by the GEO. This turn-key program comes with all necessary forms and training for the program administrator to offer for their residents. This is a rebate based program.

Recommended Budget

Minimum match to participate is the GEO's Insulate Colorado program \$25,000. To determine the maximum budget determine homes within the applicant's regional prevue that could be insulated using the guidelines on the GEO's website and multiply that number by the \$300 incentive (understanding that the first 75 homes are paid for in the \$25,000 GEO matching grant). Recommended timeline, 3 years.

ENERGY STAR New Homes Program

The ENERGY STAR new homes program works with communities or regions that have significant activity in residential new construction. This program is a coordinated effort to increase the market penetration of ENERGY STAR labeled homes. ENERGY STAR homes are residential buildings that have met certain

criteria, not the least of which is an energy efficiency “rating” that is 15% above code. Communities or regions that participate in this effort will ensure that their new construction residential buildings, buildings that will be using energy and costing residents money to operate for many decades to come, will be less costly to operate and less polluting, which is a fundamental economic development approach for communities.

Recommended Budget

Minimum match to participate is the GEO’s ENERGY STAR New Homes Program \$25,000. To determine the maximum budget determine proposed new home construction within the applicant’s regional prevue that could be brought into the program using the guidelines on the GEO’s website and multiply that number by a \$500 incentive to assist in reaching and verifying ENERGY STAR compliance.

\$25,000 to match GEO grant to administer, market and provide ENERGY STAR education plus amount of incentives to be issued. Recommended timeline, 3 years.

Small Wind

A small wind program that incents residents to utilize this renewable energy source is an opportunity in communities where there is a well documented wind resource. For this program GEO has an existing offering that creates a turn-key solution for implementation by the community or regional partner. The small wind program features rebates to offset the cost of systems and supports local economic development by incenting local business and reducing energy costs for homeowners.

Recommended Budget:

Minimum match to participate in the GEO’s small wind program is \$25,000 with a maximum recommended request of \$75,000. Recommended timeframe, 3 years.

Greening Government

Greening Government commitments help to drive a community or region towards increased sustainability by demonstrating that the government is committed to conserving resources in its operations.

The first step (a required action to be eligible to receive funding under the Greening Government portion of this program) is to adopt by city council or county commission resolution Greening Government goals, which are at least as stringent as goals established by Governor Ritter’s Greening Government Executive Orders D011 07 and D012 07. After goals have been adopted an implementation strategy similar to the one recommended here is to be followed.

Baseline and tracking tools and measurements need to be implemented and taken. Those include implementing a utility bill tracking tool to monitor energy and water use, as well as waste production, in government buildings. Additional actions like performing a waste and water audit are recommended. A tool that tracks liquid fuel use in government vehicles is recommended as well as an analysis of current procurement measures.

Next step includes an implementation strategy (sustainability management system (SMS)) must be created and implemented. This will include an implementation plan to reduce energy and liquid fuels use, water use and waste production. Determining an appropriate purchasing strategy for government and developing a green house gas inventory.

Recommended Budget:

Baseline and tracking tools for a local or regional effort recommended budget is \$160,000. The sustainability management systems required recommended budget is \$120,000. These are both multiyear efforts. Recommended timeline, 3 years.

Model Codes

Adoption of model codes for buildings and renewable energy are recommended. Communities or regional partnerships that make a commitment to adopting model codes will be given funding preference.

Recommended Budget

\$0. Some assistance provided by GEO.

Sustainability Coordinator

Funding is available for a sustainability coordinator. This position's responsibilities are to coordinate the efforts outlined in this application. Ideally the sustainability coordinator will work on a regional sustainability program. The approach outlined in this application can serve as his/her job description and work plan.

Sustainability Coordinator

\$200,000. Recommended timeframe, 3 years.

Other

Other community or regional based programs should be included in this proposal.

Program Area	<u>Community Funds*</u>	<u>GEO Funds</u>	<u>DOLA Funds</u>
Greening Public Facilities			
Energy Efficiency (EE) Equipment Incentives	\$150,000		\$750,000
Renewable Energy (RE) Equipment Incentives	\$50,000	\$25,000	\$250,000
Renewable Energy Demonstration Project	\$25,000		\$100,000
LED Communities	\$50,000		\$150,000
Small Commercial Audit and Retrofit Program			
Technical Energy Audit	\$25,000		\$100,000
Efficiency rebates	\$25,000		\$100,000
Residential Solar Electric and Solar Hot Water		\$50,000	\$100,000
Insulate Colorado	\$10,000	\$25,000	\$100,000
ENERGY STAR New Construction	\$20,000	\$25,000	\$50,000
Small Wind			
Greening Government	\$20,000		\$100,000
Model Codes			
Sustainability Coordinator			\$200,000
Total	\$375,000	\$125,000	\$2,000,000

* possibly derived from energy savings/investment in performance contract